

App. No. 10/692,288

Amendment Dated: June 1, 2005

Reply to Office Action of February 14, 2005

**Amendments to the Claims:**

Claim 1 (currently amended): In a computing environment, a system comprising:  
a visual system, the visual system being configured to receiving receive calls from one of both a program and a window desktop manager to construct a hierarchical data structure, wherein the hierarchical data structure corresponds to one of the program and the window desktop manager; and

a unified composition engine, the unified composition engine receiving commands from the visual system, wherein the unified composition engine constructs a compositor data structure in response to the commands to provide graphics output, wherein the compositor data structure corresponds to the hierarchical data structure constructed by the visual system;

a change queue that is configured to pass the commands from the visual system to the unified composition engine; and

a notify queue that is configured to pass requests and notifications from the unified composition engine to the visual system.

Claim 2 (original): The system of claim 1, wherein the unified composition engine comprises a first composition service decoupled from a second composition service, the first composition service incorporated into the visual system, and configured to provide data to the second composition service.

Claim 3 (original): The system of claim 1, further comprising:  
a master resource table included in the visual system, wherein the master resource table comprises a first list of resource used by one of the application and the desktop window manager; and

a slave resource table included in the unified composition engine, wherein the slave resource table includes a second list of resources provided to the unified composition engine, the slave resource table being managed by the master resource table.

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Claim 4 (original): The system of claim 3, wherein the second list of resources is an inclusive list of resources when compared to the first list of resources.

Claim 5 (original): The system of claim 3, wherein the master resource table is responsible for giving out handles, reference counting handle records, resources and realizations, sending resources to the slave resource, and controlling the lifetime of the slave resource table resources.

Claim 6 (original): The system of claim 3, wherein the master resource table explicitly controls the lifetime of slave resource table resources via serialized requests.

Claim 7 (currently amended): The system of claim 1, wherein the same library is executing the same compositions when the unified composition engine operates in response to the desktop window manager and when the unified composition engine operates in response to a program.

~~protocols for use with the desktop window manager comprise a functional subset of the protocols available when an application is the client.~~

Claim 8 (original): The system of claim 1, wherein protocols for use by the unified composition engine when responsive to the desktop window manager comprise a functional subset of the protocols for use by the unified composition engine when responsive to the program.

Claim 9 (original): The system of claim 1, wherein the slave resource table resources are accessed on a single composition thread.

Claim 10 (original): The system of claim 1, wherein the unified composition engine runs as a single thread and runs in a constant composition loop.

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Claim 11 (original): The system of claim 1, further comprising additional visual systems that communicate to the unified composition engine such that the graphics output corresponds to the visual systems.

Claim 12 (original): The system of claim 1, further comprising additional unified composition engines that communicate to the visual system such that multiple graphics outputs are produced that correspond to the visual system.

Claim 13 (currently amended): In a computing system, a method comprising:  
receiving calls from ~~one of both~~ a program and a desktop window manager, wherein a hierarchical scene structure is constructed by a visual system in response to the calls such that the hierarchical scene structure corresponds to one of the program and the desktop window manager;  
communicating information that represents changes to the hierarchical data structure to a unified composition engine;  
communicating a set of resources to the unified composition engine, wherein the set of resources correspond to a master resource table that is related to the hierarchical data structure;  
updating information in the compositor data structure based on the communicated information;  
updating a slave resource table based on the communicated set of resources, wherein the slave resource table is related to the compositor data structure; and  
processing the compositor data structure to output graphics information; and  
passing queued requests and notifications from the unified composition engine to the visual system.

Claim 14 (original): The method of claim 13, wherein constructing the hierarchical scene structure process is asynchronously performed in comparison to the processing of the compositor data structure to produce the output graphics information.

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Claim 15 (original): The method of claim 13, wherein the slave resource table comprises a list of resources that is an inclusive list of resources when compared to the master resource table.

Claim 16 (original): The method of claim 13, further comprising controlling the lifetime of the slave resource table resources in response to the master resource table.

Claim 17 (currently amended): The method of claim 13, further comprising executing compositions using the unified composition engine according to a first library when the unified composition engine operates in response to the desktop window manager and executing compositions using the unified composition engine according to the first library when the unified composition engine operates in response to a program.

~~protocols for use with the desktop window manager comprise a functional subset of the protocols available when an application is the client.~~

Claim 18 (original): The method of claim 13, wherein protocols for use by the unified composition engine when responsive to the desktop window manager comprise a functional subset of the protocols for use by the unified composition engine when responsive to the program.

Claim 19 (original): The method of claim 13, further comprising accessing the slave resource table resources on a single composition thread.

Claim 20 (original): The method of claim 13, further comprising running the unified composition engine as a single thread and in a constant composition loop.

Claim 21 (original): The method of claim 13, further comprising communicating additional information and additional sets of resources to the unified composition engine such that the graphics output information corresponds to additional programs.

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Claim 22 (original): The method of claim 13, further comprising communicating the information and set of resources to multiple unified composition engines such that multiple graphics output information is produced that corresponds to the one of program and desktop window manager.